

REMARKS

Claims 10, 13, 14, 16, 18, 25, 27 and 30-43 are amended, Claims 1-9 and 19-24 are cancelled and Claims 44-50 are added. Accordingly, Claims 10-18 and 25-50 are pending. Applicants respectfully request reconsideration of pending Claims 10-18 and 25-50 in view of at least the following remarks. Reconsideration and withdrawal of the rejections of record are requested in view of such amendments and the following discussion.

I. Drawings Objection

The Examiner has objected to the drawings for failing to show “a plurality of circuitries, as recited in Claims 30-43. In response, Applicants have deleted reference to the term “circuitry” in Claims 30-43. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the objection to the drawings.

II. Specification Objection

The Examiner has objected to the specification for failing to provide proper antecedent basis for the claimed subject matter; namely, the plurality of circuitries recited in Claims 30-43. In response, Applicants have amended Claims 30-43 to delete reference to the term “circuitry.” Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the objection to the specification.

III. Claims Rejected Under 35 U.S.C. §112

The Examiner has rejected Claims 1-43 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which Applicants regard as the invention. Regarding reference to the term “split-completion” in Claims 10, 15, 16, 23 and 28, Applicants have amended the respective claims to define the storage of transaction information as a “split-completion.” Likewise, with regards to the term “arbitrating the split-completion,” Applicants have amended reference to such terminology to recite “arbitrating to select a split-completion.” Accordingly, Applicants respectfully submit that amended Claims 10, 15, 16, 23 and 28 now particularly point out and distinctly claim the subject matter, which Applicant regards as the invention.

Regarding Claim 30, Applicants amend Claim 30 to provide the necessary structural connections between the arbiter and the buffer, such that the arbiter selects a split-completion from the buffer. Accordingly, Claim 30, as amended, provides the essential structural cooperative relationships between the buffer and the arbiter.

Regarding Claims 33 and 34, Claims 33 and 34 have been amended to omit reference to “circuitry.” Accordingly, Claims 33 and 34, as amended, now particularly point out and distinctly claim the subject matter, which Applicants regard as the invention.

Regarding Claim 39, Claim 39 has been amended to provide the essential structural cooperative relationships between “bridge” and “processor,” as well as clarifying the term “split-completion.” Accordingly, Claims 39-43, as amended, now distinctly claim the subject matter, which Applicants regard as the invention.

Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the 35 U.S.C. §112, second paragraph of Claims 10-18 and 25-43.

IV. Claims Rejected Under 35 U.S.C. §102

Although the Examiner has rejected Claims 1-5, 7-8, 10-18, 25-35 and 37-43, under §§102(b) and 102(e) of 35 U.S.C., the Examiner’s rejection includes reference to the PCI-X Addendum to the PCI Local Bus Specification, Revision 1.0a, 7/24/2004, referred to herein as “PCI-X Specification.” However, Applicants respectfully submit that anticipation generally requires a single prior art reference.

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” Lindemann Maschinenfabrik v. American Hoist & Derrick (“Lindemann”), 730 F.2d 452, 1458 (Fed. Cir. 1994)(emphasis added). Additionally, each and every element of the claim must be exactly disclosed in the anticipatory reference. Titanium Metals Corp. of America v. Banner (“Banner Titanium”), 778 F.2d 775, 777 (Fed. Cir. 1985).

Accordingly, Applicants respectfully submit that since anticipation requires a single prior art reference to teach each of the elements recited by a claim, the Examiner is prohibited from relying on the combinations of Shah, in view of the PCI-X Specification, Reams, in view of the PCI-X Specification and Fischer, in view of the PCI-X Specification. Consequently, Applicants respectfully submit that the Examiner’s rejection of 1-5, 7-8, 10-18, 25-35 and 37-43, under 35 U.S.C. §§102(b) and 102(e), are issued in error. Nevertheless, even assuming the combination cited by the Examiner, each of the pending claims are patentable over the references of record, for at least the reasons provided below.

The Examiner has rejected Claims 1-5, 7, 8, 10-18, 25-35 and 37-43 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application No. US 2002/0120799 issued to Shah (“Shah”). Applicants respectfully traverse this rejection.

Regarding Claims 10 and 25, Claims 10 and 25 are amended to recite the following claim feature, which is neither taught nor suggested by either Shah or the references of record:

restricting a duration of the split-completion transaction according to a maximum split-completion transaction duration associated with the split-completion transaction. (Emphasis added.)

According to the Examiner:

The PCI-X bus bridge of Shah, as any PCI-X bus bridge, must be in full compliance with PCI-X bus specification; wherein a target initiated latency limit is provided (a split-completion transaction is originated from the target). See the widely-available PCI-X Addendum to the PCI Local Bus Specification, Revision 1.0a, 7/24/2000 (pg. 8, ¶ 4 of the Office Action mailed April 6, 2004).

Applicants respectfully disagree with the Examiner's contention. As known to those familiar with PCI and PCI-X, the latency limit referred to by the Examiner is actually a latency timer, which defines the minimum amount of time (time slice) that a bus master can retain ownership of the bus whenever it initiates a new transaction. In other words, as in PCI, each bus master is assigned a time slice that defines a minimum period of time that the bus master is guaranteed bus ownership. Hence, if a bus master is preempted (i.e., its grant signal is de-asserted by the arbiter) before it has transferred all the data it intended to transfer, the bus master may continue the transaction until its time slice has expired and must then disconnect the transaction on the next block boundary.

Consequently, the PCI-X Specification does not prohibit a transaction from continuing indefinitely, assuming the transaction is not stopped by the target or a grant signal withdrawn from the arbiter, since the MLT is limited to providing a minimum time slice to a bus master. Conversely, the maximum split-completion transaction duration strictly limits split-completion transactions to an associated duration, as recited by Claims 10 and 25.

Accordingly, Applicants respectfully submit that the PCI-X Specification, as well as the entire text of Shah, provide no teachings or suggestions with regards to restricting split-completion transactions to a maximum split-completion duration, as recited by Claims 10 and 25. The case law is quite clear in establishing that each and every element of the claim must be exactly disclosed in the anticipatory reference. *Id.*

Accordingly, Applicants respectfully submit that the Examiner fails to establish a *prima facie* case of anticipation of Claims 10 and 25 since Shah, as well as the references of record, fail to teach or suggest each and every element of Claims 10 and 25, as amended. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(e) rejection of Claims 10 and 25.

Regarding Claims 11-18, Claims 11-18 depend from Claim 10 and therefore recite the patentable claim features of Claim 10, as described above. Accordingly, Claims 11-18, based on their dependency from Claim 10, are also patentable over Shah, as well as the references of record.

Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(e) rejection of Claims 11-18.

Regarding new Claims 44 and 45, new Claims 44 and 45 depend from Claim 10, and are therefore also patentable over Shah, as well as the references of record, based on their dependency from Claim 10. Consequently, Applicants respectfully request that the Examiner allow new Claims 44 and 45.

Regarding Claims 26-29, Claims 26-29 depend from Claim 25 and therefore recite the patentable claim features of Claim 25, as described above. Accordingly, Claims 26-29, based on their dependency from Claim 25, are also patentable over Shah, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(e) rejection of Claims 26-29.

Regarding Claims 30 and 39, Claims 30 and 39 recite the following analogous claim features, which are neither taught nor suggested by either Shah or the references of record:

an arbiter to initiate a split-completion transaction for a split completion selected from the buffer based upon a priority associated with the split completion and to restrict a duration of the split-completion transaction according to a maximum split-completion transaction duration associated with the split-completion transaction. (Emphasis added.)

As described above with reference to the rejection of Claims 10 and 25, the entire text of Shah, as well as the PCI-X Specification, are devoid of any teachings or suggestions with regards to restricting the duration of a split-completion transaction to a maximum split-completion transaction duration. Applicants respectfully submit that the master latency timer (MLT), as taught by the PCI-X Specification, provides a minimum time slice for transactions; and hence, provides a minimum period of time in which a bus master is guaranteed bus ownership.

Consequently, the PCI-X Specification does not prohibit a transaction from continuing indefinitely, assuming the transaction is not stopped by the target or a grant signal withdrawn from the arbiter, since the MLT is limited to providing a minimum time slice to a bus master. Conversely, the maximum split-completion transaction duration strictly limits split-completion transactions to an associated duration, as recited by Claims 30 and 39.

Hence, Applicants, respectfully submit that the Examiner fails to establish a *prima facie* case of anticipation of Claims 30 and 39, since the Examiner fails to illustrate the exact disclosure of each and every element of Claims 30 and 39 within the anticipatory reference of Shah. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(e) rejection of Claims 30 and 39.

Regarding Claims 31-35, 37 and 38, Claims 31-25, 37 and 38 depend from Claim 30, and therefore recite the patentable claim features of Claim 30, as described above. Accordingly, Claims 31-35, 37 and 38, based on their dependency from Claim 30, are also patentable over Shah, as well

as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(e) rejection of Claims 31-35, 37 and 38.

Regarding Claims 40-43, Claims 40-43 depend from Claim 39, and therefore recite the patentable claim features of Claim 39, as described. Accordingly, Claims 40-43, based on their dependency from Claim 39, are also patentable over Shah, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(e) rejection of Claims 40-43.

Regarding new Claims 46-50, new Claims 46-50 depend from Claim 39, and are therefore also patentable over Shah, as well as the references of record, based on its dependency from Claim 39. Consequently, Applicants respectfully request that the Examiner allow new Claims 46-50.

The Examiner has rejected Claims 1-5, 7, 8, 10-35 and 37-43 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,826,045 issued to Reams ("Reams"). Applicants respectfully traverse this rejection.

Regarding Claims 10 and 25, Claims 10 and 25 are amended to recite the following claim feature, which is neither taught nor suggested by either Reams or the references of record:

restricting a duration of the split-completion transaction according to a maximum split-completion transaction duration associated with the split-completion transaction. (Emphasis added.)

According to the Examiner:

The PCI-X bus bridge of Reams, as any PCI-X bus bridge, must be in full compliance with PCI-X bus specification; wherein a target initiated latency limit is provided (a split-completion transaction is originated from the target). (pg. 10, ¶ 3 of the Office Action mailed April 6, 2004).

Applicants respectfully disagree with the Examiner's contention for at least the reasons provided above with reference to the rejections of Claims 10, 25, 30 and 39. Reams describes:

[An] arbitration parking scheme [that] includes parking a memory agent if there is an outstanding request. If there is no outstanding request and neither a processor nor memory agent request, then the arbiter parks either a memory agent or a processor agent depending on system characteristics. By parking the agent to request access to the split transaction bus next, arbitration overhead is reduced. (See, Abstract.)

The arbitration parking scheme of Reams is silent as to a maximum split-completion transaction duration to strictly limit split-completion transactions to an associated duration, as recited by Claims 10 and 25.

Accordingly, Applicants respectfully submit that the PCI-X Specification, as well as the entire text of Reams, provide no teachings or suggestions with regards to restricting split-

completion transactions to a maximum split-completion duration, as recited by Claims 10 and 25. However, the case law is quite clear in establishing that each and every element of the claim must be exactly disclosed in the anticipatory reference. *Id.*

Accordingly, Applicants respectfully submit that the Examiner fails to establish a *prima facie* case of anticipation of Claims 10 and 25 since Reams, as well as the references of record, fail to teach or suggest each and every element of Claims 10 and 25, as amended. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 10 and 25.

Regarding Claims 11-18, Claims 11-18 depend from Claim 10 and therefore recite the patentable claim features of Claim 10, as described above. Accordingly, Claims 11-18, based on their dependency from Claim 10, are also patentable over Reams, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 11-18.

Regarding new Claims 44 and 45, new Claims 44 and 45 depend from Claim 10, and are therefore also patentable over Reams, as well as the references of record, based on its dependency from Claim 10. Consequently, Applicants respectfully request that the Examiner allow new Claims 44 and 45.

Regarding Claims 26-29, Claims 26-29 depend from Claim 25 and therefore recite the patentable claim features of Claim 25, as described above. Accordingly, Claims 26-29, based on their dependency from Claim 25, are also patentable over Reams, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 26-29.

Regarding Claims 30 and 39, Claims 30 and 39 recite the following analogous claim features, which are neither taught nor suggested by either Reams or the references of record:

an arbiter to initiate a split-completion transaction for a split completion selected from the buffer based upon a priority associated with the split completion, and to restrict a duration of the split-completion transaction according to a maximum split-completion transaction duration associated with the split-completion transaction. (Emphasis added.)

The entire text of Reams, as well as the PCI-X Specification, are devoid of any teachings or suggestions with regards to restricting the duration of a split-completion transaction to a maximum split-completion transaction duration, as recited by Claims 30 and 39.

Hence, Applicants, respectfully submit that the Examiner fails to establish a *prima facie* case of anticipation of Claims 30 and 39, since the Examiner fails to illustrate the exact disclosure of each and every element of Claims 30 and 39 within the anticipatory reference of Reams. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 30 and 39.

Regarding Claims 31-35, 37 and 38, Claims 31-25, 37 and 38 depend from Claim 30, and therefore recite the patentable claim features of Claim 30, as described above. Accordingly, Claims 31-35, 37 and 38, based on their dependency from Claim 30, are also patentable over Reams, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 31-35, 37 and 38.

Regarding Claims 40-43, Claims 40-43 depend from Claim 39, and therefore recite the patentable claim features of Claim 39, as described. Accordingly, Claims 40-43, based on their dependency from Claim 39, are also patentable over Reams, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 40-43.

Regarding new Claims 46-50, new Claims 46-50 depend from Claim 39, and are therefore also patentable over Reams, as well as the references of record, based on its dependency from Claim 39. Consequently, Applicants respectfully request that the Examiner allow new Claims 46-50.

The Examiner has rejected Claims 1-5, 7-35 and 37-43 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,785,394 issued to Fischer (“Fischer”). Applicants respectfully traverse this rejection.

Regarding Claims 10 and 25, Claims 10 and 25 are amended to recite the following claim feature, which is neither taught nor suggested by either Fischer or the references of record:

restricting a duration of the split-completion transaction for the selected split-completion according to a maximum split-completion transaction duration associated with the split-completion transaction.

According to the Examiner:

The PCI-X bus bridge of Fischer, as any PCI-X bus bridge, must be in full compliance with PCI-X bus specification; wherein a target initiated latency limit is provided (a split-completion transaction is originated from the target). See the widely-available PCI-X Addendum to the PCI Local Bus Specification, Revision 1.0a, 7/24/2000 (pg. 13, ¶ 4 of the Office Action mailed April 6, 2004).

Applicants respectfully disagree with the Examiner’s contention, for at least the reasons provided above. Applicants respectfully submit that the PCI-X Specification, as well as the entire text of Fischer, provide no teachings or suggestions with regards to restricting split-completion transactions to a maximum split-completion duration, as recited by Claims 10 and 25. However, the case law is quite clear in establishing that each and every element of the claim must be exactly disclosed in the anticipatory reference. *Id.*

Therefore, Applicants respectfully submit that the Examiner fails to establish a *prima facie* case of anticipation of Claims 10 and 25 since Fischer, as well as the references of record, fail to teach or suggest each and every element of Claims 10 and 25, as amended. Consequently,

Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 10 and 25.

Regarding Claims 11-18, Claims 11-18 depend from Claim 10 and therefore recite the patentable claim features of Claim 10, as described above. Accordingly, Claims 11-18, based on their dependency from Claim 10, are also patentable over Fischer, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 11-18.

Regarding new Claims 44 and 45, new Claims 44 and 45 depend from Claim 39, and are therefore also patentable over Fischer, as well as the references of record, based on its dependency from Claim 39. Consequently, Applicants respectfully request that the Examiner allow new Claims 44 and 45.

Regarding Claims 26-29, Claims 26-29 depend from Claim 25 and therefore recite the patentable claim features of Claim 25, as described above. Accordingly, Claims 26-29, based on their dependency from Claim 25, are also patentable over Fischer, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 26-29.

Regarding Claims 30 and 39, Claims 30 and 39 recite the following analogous claim features, which are neither taught nor suggested by either Fischer or the references of record:

an arbiter to initiate a split-completion transaction for a split completion selected from the buffer based upon a priority associated with the split completion, and to restrict a duration of the split-completion transaction according to a maximum split-completion transaction duration associated with the split-completion transaction. (Emphasis added.)

As described above with reference to the rejection of Claims 10 and 25, the entire text of Fischer, as well as the PCI-X Specification referred to by the Examiner, is devoid of any teachings or suggestions with regards to restricting the duration of a split-completion transaction to a maximum split-completion transaction duration, as recited by Claims 30 and 39. Hence, Applicants, respectfully submit that the Examiner fails to establish a *prima facie* case of anticipation of Claims 30 and 39, since the Examiner fails to illustrate the exact disclosure of each and every element of Claims 30 and 39 within the anticipatory reference of Fischer. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 30 and 39.

Regarding Claims 31-35, 37 and 38, Claims 31-25, 37 and 38 depend from Claim 30, and therefore recite the patentable claim features of Claim 30, as described above. Accordingly, Claims 31-35, 37 and 38, based on their dependency from Claim 30, are also patentable over Fischer, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 31-35, 37 and 38.

Regarding Claims 40-43, Claims 40-43 depend from Claim 39, and therefore recite the patentable claim features of Claim 39, as described. Accordingly, Claims 40-43, based on their dependency from Claim 39, are also patentable over Fischer, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 40-43.

Regarding new Claims 46-50, new Claims 46-50 depend from Claim 39, and are therefore also patentable over Fischer, as well as the references of record, based on its dependency from Claim 39. Consequently, Applicants respectfully request that the Examiner allow new Claims 46-50.

V. Claims Rejected Under 35 U.S.C. §103

The Examiner has rejected Claims 6 and 35 under 35 U.S.C. §103(a) as being unpatentable over Shah. Applicants respectfully traverse this rejection.

To establish a *prima facie* case of obviousness, the following criteria must be met: (1) there must be some suggestion or motivation to modify the reference or combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all the claim limitations. (MPEP §2142) For the reasons provided below, the Examiner has failed to establish a *prima facie* case of obviousness in view of the references of record.

Regarding Claim 35, Applicants respectfully submit that the Examiner's citing of Kelley fails to rectify the deficiencies of Shah in failing to teach a maximum split-completion transaction duration, as recited by Claim 30. Accordingly, Claim 30, as amended, is patentable over the combination of Shah, in view of Kelley, as well as the references of record. Consequently, Claim 35, based on its dependency from Claim 30, is patentable over the combination of Shah, in view of Kelley, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claim 35.

CONCLUSION

In view of the foregoing, it is submitted that Claims 10-18 and 25-50 as amended, patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

Dated: September 2, 2004

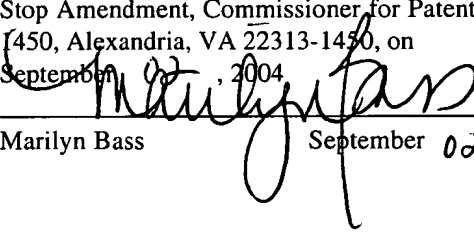
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CERTIFICATE OF MAILING:

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Marilyn Bass

September 02, 2004